FLOOD WARNING SYSTEM for the PAROO RIVER

This brochure describes the flood warning system operated by the Australian Government, Bureau of Meteorology for the Paroo River. It includes reference information which will be useful for understanding Flood Warnings and River Height Bulletins issued by the Bureau's Flood Warning Centre during periods of high rainfall and flooding.

Contained in this document is information about:
(Last updated September 2019)

- Flood Risk
- Previous Flooding
- Flood Forecasting
- Local Information
- Flood Warnings and Bulletins
- Interpreting Flood Warnings and River Height Bulletins
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Flood Risk

The Paroo River catchment is located in south west Queensland and covers an area of approximately 31,000 square kilometres. The river rises in country to the north of Cheepie and flows in a southerly direction. It is joined by its major tributary, Beechal Creek, immediately below Humeburn before passing through Eulo, and eventually crossing the Queensland-New South Wales border at Hungerford. Floods normally develop in the headwaters of the Paroo River and Beechal Creek, however, flooding may result from heavy rainfall falling in the middle to lower reaches of the catchment.

The town of Eulo is not usually directly affected by floodwaters. The April 1990 and March 2010 floods at Hungerford, on the Queensland-NSW border, caused both inundation of a number of residences and isolation by floodwaters for a considerable period of time.

Previous Flooding

The Paroo River at Eulo has a well documented history of flooding dating as far back as 1890 with Hungerford having records dating back since 1974. The significant flood peaks at Eulo and Hungerford are shown in the following diagrams.
Flood Forecasting

The Bureau of Meteorology operates a flood warning system for the Paroo River basin based on a rainfall and river height observations network shown on the map. The network consists of a number of volunteer rainfall and river height observers who forward observations by telephone when the initial flood height has been exceeded at their station, as well as automatic telephone telemetry stations at Humeburn and Caiwarro which are operated by the Bureau of Meteorology and the Department of Natural Resources, Mines and the Environment.

The Bureau's Flood Warning Centre issues Flood Warnings and River Height Bulletins for the Paroo River during flood events. Quantitative flood forecasts are issued for locations at Eulo and Hungerford when moderate flood levels are likely to be exceeded.

Local Information
The Paroo and Quilpie Shire Councils may be able to provide further information on flooding in your area of the Paroo River catchment.

**Flood Warnings and Bulletins**

The Bureau of Meteorology issues Flood Warnings and River Height Bulletins for the Paroo River regularly during floods. They are sent to radio stations for broadcast, and to local Councils, emergency services and a large number of other agencies involved in managing flood response activities. Flood Warnings and River Height Bulletins are available via:

**Radio**

Radio stations, particularly the local ABC, and local commercial stations, broadcast Flood Warnings and River Height Bulletins soon after issue.

**Local response organisations**

These include the Councils, Police, and State Emergency Services in the local area.

**Internet/World Wide Web**


**Telephone Weather**

Flood Warnings are available through a recorded voice retrieval system, along with a wide range of other weather related and climate information.

- **Main Directory**
  
  Phone 1900 955 360

- **Flood Warnings**
  
  Phone 1300 659 219

**Interpreting Flood Warnings and River Height Bulletins**

Flood Warnings and River Height Bulletins contain observed river heights for a selection of the river height monitoring locations. The time at which the river reading has been taken is given together with its tendency (e.g. rising, falling, steady or at its peak). The Flood Warnings may also contain predictions in the form of minor, moderate or major flooding for a period in the future. River Height Bulletins also give the height above or below the road bridge or causeway for each river station located near a road crossing.

One of the simplest ways of understanding what the actual or predicted river height means is to compare the height given in the Warning or Bulletin with the height of previous floods at that location.

The table below summarises the flood history of the Paroo River basin - it contains the flood gauge heights of the more significant recent floods.

<table>
<thead>
<tr>
<th>River height station</th>
<th>Quilpeta</th>
<th>Humeburn</th>
<th>Eulo</th>
<th>Carpet Springs</th>
<th>Caiwarro</th>
<th>Hungerford</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan 1974</td>
<td>-</td>
<td>7.62</td>
<td>5.79</td>
<td>2.92</td>
<td>4.77</td>
<td>2.90</td>
</tr>
<tr>
<td>Feb 1976</td>
<td>-</td>
<td>-</td>
<td>4.96</td>
<td>-</td>
<td>4.81</td>
<td>2.78</td>
</tr>
<tr>
<td>May 1983</td>
<td>-</td>
<td>6.20</td>
<td>5.06</td>
<td>-</td>
<td>4.52</td>
<td>2.50</td>
</tr>
<tr>
<td>Apr 1990</td>
<td>4.43</td>
<td>7.18</td>
<td>5.80</td>
<td>-</td>
<td>4.77</td>
<td>2.92</td>
</tr>
<tr>
<td>Feb 1997</td>
<td>-</td>
<td>5.78</td>
<td>4.63</td>
<td>-</td>
<td>4.02</td>
<td>2.16</td>
</tr>
<tr>
<td>Jan 2004</td>
<td>3.90</td>
<td>6.15</td>
<td>5.15</td>
<td>2.40</td>
<td>4.50</td>
<td>2.45</td>
</tr>
<tr>
<td>Jan 2008</td>
<td>3.35</td>
<td>6.30</td>
<td>4.95</td>
<td>-</td>
<td>4.30</td>
<td>2.30</td>
</tr>
<tr>
<td></td>
<td>Mar 2010</td>
<td>Jan/Feb 2012</td>
<td>Apr/May 2019</td>
<td>Jan/Feb 2012</td>
<td>Apr/May 2019</td>
<td></td>
</tr>
<tr>
<td>---------------</td>
<td>----------</td>
<td>--------------</td>
<td>--------------</td>
<td>--------------</td>
<td>--------------</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6.00</td>
<td>4.50</td>
<td>-</td>
<td>4.20</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6.27</td>
<td>4.85</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.00</td>
<td>-</td>
<td>4.20</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4.99</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2.87</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1.80</td>
<td></td>
</tr>
</tbody>
</table>

All heights are in metres on flood gauges.

Historical flood heights for all river stations in the Paroo River Floodwarning network, as shown on the map, are available from the Bureau of Meteorology upon request.

**PAROO RIVER CATCHMENT - ASSESSMENT OF THE FLOOD POTENTIAL**

Major flooding requires a large scale rainfall situation over the Paroo River catchment. The following can be used as a rough guide to the likelihood of flooding in the catchment:

75mm in 24 hours over isolated areas, with lesser rains of 50mm over more extensive areas will cause stream rises and the possibility of minor flooding. If lesser rainfalls have been recorded in the previous 24 to 72 hrs, then moderate to major flooding may develop.

100mm in 24 hours will cause isolated flooding in the immediate area of the heavy rain.

General 100mm or heavier falls in 24 hours over a wide area will most likely cause major flooding. In the lower reaches these falls may cause relatively fast initial rises at Eulo, Caiwarro and Hungerford, before upstream rises occur.
Flood Classifications

At each flood warning river height station, the severity of flooding is described as minor, moderate or major according to the effects caused in the local area or in nearby downstream areas. Terms used in Flood Warnings are based on the following definitions.

**Minor Flooding**: Causes inconvenience. Low-lying areas next to watercourses are inundated. Minor roads may be closed and low-level bridges submerged. In urban areas inundation may affect some backyards and buildings below the floor level as well as bicycle and pedestrian paths. In rural areas removal of stock and equipment may be required.

**Moderate Flooding**: In addition to the above, the area of inundation is more substantial. Main traffic routes may be affected. Some buildings may be affected above the floor level. Evacuation of flood affected areas may be required. In rural areas removal of stock is required.

**Major Flooding**: In addition to the above, extensive rural areas and/or urban areas are inundated. Many buildings may be affected above the floor level. Properties and towns are likely to be isolated and major rail and traffic routes closed. Evacuation of flood affected areas may be required. Utility services may be impacted.

Each river height station has a pre-determined flood classification which details heights on gauges at which minor, moderate and major flooding commences. Other flood heights may also be defined which indicate at what height the local road crossing or town becomes affected by floodwaters.

The table below shows the flood classifications for selected river height stations in the Paroo River catchment.

<table>
<thead>
<tr>
<th>River Height Station</th>
<th>First Report Height</th>
<th>Crossing Height</th>
<th>Minor Flood Level</th>
<th>Crops &amp; Grazing</th>
<th>Moderate Flood Level</th>
<th>Towns and Houses</th>
<th>Major Flood Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quilpeta</td>
<td>0.5</td>
<td>-</td>
<td>2.0</td>
<td>-</td>
<td>3.0</td>
<td>-</td>
<td>4.0</td>
</tr>
<tr>
<td>Humeburn</td>
<td>-</td>
<td>4.50 (B)</td>
<td>1.8</td>
<td>-</td>
<td>2.8</td>
<td>-</td>
<td>4.3</td>
</tr>
<tr>
<td>Allambie</td>
<td>2.0</td>
<td>-</td>
<td>3.0</td>
<td>-</td>
<td>4.0</td>
<td>-</td>
<td>4.5</td>
</tr>
<tr>
<td>Eulo</td>
<td>2.0</td>
<td>3.00 (A)</td>
<td>2.0</td>
<td>3.0</td>
<td>3.0</td>
<td>-</td>
<td>4.0</td>
</tr>
<tr>
<td>Caiwarro</td>
<td>-</td>
<td>-</td>
<td>1.5</td>
<td>-</td>
<td>2.5</td>
<td>-</td>
<td>3.5</td>
</tr>
<tr>
<td>Hungerford</td>
<td>0.5</td>
<td>0.90 (X)</td>
<td>1.0</td>
<td>1.0</td>
<td>1.5</td>
<td>2.5</td>
<td>2.0</td>
</tr>
</tbody>
</table>
All heights are in metres on flood gauges. (B) = Bridge  (A) = Approaches  (X) = Crossing

The above details are correct at the time of preparing this document. Up-to-date flood classifications and other details for all flood warning stations in the network are at:

Flood gauge information

For the latest rainfall and river height conditions please use the following link:

Latest rainfall and river heights

For the latest rainfall and river height network map please use the following link:

Network maps

For further information, contact:
The Flood Services Manager, Bureau of Meteorology, GPO Box 413, Brisbane QLD 4001